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NUSC TECHNICAL VOLUNTEER SERVICE (TVS)(U) NAVAL
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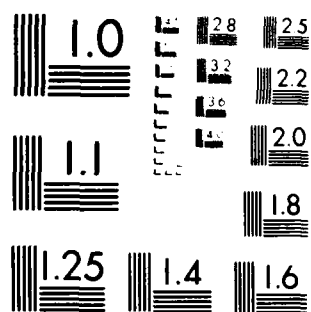
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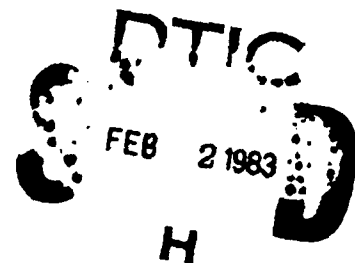
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12 December 1982

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NUSC Technical Volunteer Service (TVS)

Donna J. Mansfield
New England Innovation Group (NEIG)
Providence, RI

ADA 124014



Naval Underwater Systems Center
Newport, Rhode Island / New London, Connecticut

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Preface

This document was prepared under Job Order 707K13.

The author of this document is an employee of the New England Innovation Group (NEIG). She was assigned from NEIG to the Naval Underwater Systems Center (NUSC) from November 1980 to November 1982 under the mobility provisions of the Intergovernmental Personnel Act of 1970.

Reviewed and Approved: 12 December 1982

A handwritten signature in dark ink, appearing to read 'J H Keegan', with a stylized, flowing script.

J. H. Keegan
Head, Program & Financial Management Staff

Inquiries concerning this document should be referred to the
Office of Special Programs Development (Code 0702) at the New London
Laboratory, Naval Underwater Systems Center, New London, Connecticut 06320.

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This document describes the formation and services provided by the Naval Underwater Systems Center's (NUSC) Technical Volunteer Service (TVS). The document can serve as a guide for Federal laboratories and other organizations wishing to establish a similar service among its employees. NUSC's TVS serves local governments in a three-state area with volunteer technical assistance by active and retired employees. Twelve barriers to establishing NUSC's TVS, the approaches		

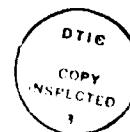
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used to overcome them, and the results are described. Eight steps to implementing a TVS are detailed. Examples of NUSC volunteers' services, documentation forms, and other supporting material are supplied in the figures and appendixes.

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NUSC TECHNICAL VOLUNTEER SERVICE

Some things can be free!

NUSC retirees act as unpaid consultants to provide services to cities and towns.

(TVS) Technology Transfer Gives Advice To Blind

Recently the American Foundation for the Blind visited NUSC's New London Laboratory to investigate possibilities.

NUSC Retirees Lend Their Expertise To Communities

by Donna Mansfield, 0702

Up on rooftops. Down on all fours with an ear to the ground. Sorting through stacks of equipment in a junkyard.

could not fix the equipment himself, he could turn to personnel in his New London Department.

NUSC Helps Solve Acoustic Problem...

Extensive modifications made by the City of New London to the former St. Bernard's School complex resulted in an alteration of acoustic conditions which

NAVAL UNDER

Technology Transfer At NUSC

by Margaret Kules, 0702

Technology Transfer is the process of developing and applying the effective use of science and technology to solve problems. It is a vital part of the research and development process.

EDUCATION

A working system of education is essential for the development of a nation. It is the responsibility of the government to provide a quality education for all citizens.

Officials Attend New London Computer Graphics Workshop

Nearly 70 state and municipal officials from Connecticut and Rhode Island attended a computer graphics workshop held at the New London Laboratory August 9. The workshop was arranged by the Office of Special Programs Development, Code 0702, as part of an ongoing effort to provide technical assistance to local communities.

Attendees to the workshop included Frank W. in Charleston, Sr.

Second Technology Transfer Workshop

NUSC, in conjunction with the Connecticut College, held the second in a series of technology transfer workshops for state and local officials.

turning to the Technology Transfer Office at NUSC for assistance. James Shutt, 071, explained the system as it was designed for Old Lyme and addressed its applicability to towns of similar structure. The Municipal Finance Department and its problems were discussed by John Beau-

Technology Transfer Lends Expertise To Social Welfare

A police communications system is a logical area in which to find NUSC experts supporting the technology transfer process. The Office of Special Programs Development, Code 0702, however, is finding new applications for mission developed expertise. Broad-based medical social problems

other heart muscle cells will follow suit. Patients with heart block, or those awaiting pacemaker implantation could benefit from pre-operative temporary heart rate increase.

NUSC Volunteers Serve Their Community

Technical Volunteer is perking away like a teapot on the back of a wood stove. Provides a friendly low-key between Center who have developed skills through their community activities or

area for navigational aids for their ferries; a Connecticut town needs help scheduling policemen to provide coverage on every shift; someone needs to know whether an automobile engine analysis was available for under a request for review engineering computer from a Conser-

NUSC TECHNICAL VOLUNTEER SERVICE (TVS)

INTRODUCTION

The Technical Volunteer Service (TVS) at the Naval Underwater Systems Center (NUSC) was established in the Office of Special Programs Development to transfer Federal technology to state and local governments and the private sector. Initiated in the early 70's, this program brings greater public benefit to the American people from taxpayer-financed research and development (R&D).

Under the jurisdiction of 12 federal agencies, there are 779 Federal R&D laboratories and research centers in the United States that have the potential to make this greater public contribution. Collectively, these institutions employ approximately 200,000 scientists and engineers. The expertise of these people spans virtually every facet of science and engineering. Such an array of technical knowledge represents a priceless national resource.

NUSC has actively supported Technology Transfer (T²) since the early 70's when administration officials began to advocate a posture change for Federally funded laboratories. Rather than focus exclusively on a single-sponsor mission statement, Federal laboratories were now encouraged to further address themselves to those problems of the American people that might come under their umbrella of expertise.

Federal research has, over time, produced impressive results. The pacemaker, an adapted technology, now aids heart disease victims. The concept of the bulletproof vest was transferred from the American soldier to the municipal police officer. A new application for Navy sonar was found in modern medicine in monitoring the health of unborn children. These are but a few examples of what is meant by T².

From its early days of informal advocacy, T² became an article of Navy policy in 1972 and Federal policy in 1980. Today, laboratories with R&D budgets over \$20 million dollars are mandated to designate an Office of Research and Technology Applications (ORTA) representative to oversee this transfer function.

NUSC's longtime T² participation has been shaped by two constraints: Nothing in the program is to interfere with NUSC's primary Navy mission nor will the program encourage projects that compete with private enterprise.

In April 1978, an employee was hired at NUSC to develop and coordinate a local T² program. This person was experienced in community affairs, was previously in business, and therefore was well known in local business, municipal government, and nonprofit sectors.

Although several local T² initiatives were begun, one program proved remarkable in its success. That program is the TECHNICAL VOLUNTEER SERVICE (TVS). It uses the technical skills and personal time of employees to solve local problems. Essentially an employee involvement program, TVS now numbers nearly 400 volunteers, including both active and retired employees.

Much planning went into the TVS and great sensitivity was necessary in order to initiate this concept into a Department of Defense (DoD) laboratory without embarrassing mistakes. NUSC's image was always of primary concern. Careful preparation was also necessary to nourish a receptive environment for the TVS within both NUSC and the outside community.

The idea for the TVS was established by a single civic-minded employee who, on his own initiative, functioned as a liaison between his community and his workplace. When he learned that his local police force was having problems with its communications equipment, he called on fellow workers to provide free help. When it was further suspected that the town's new siren system did not operate according to specifications, he borrowed NUSC equipment to measure the siren's output. Using this approach, he was able to acquire previously unavailable sophisticated technical assistance for his community.

Having observed this "one-man operation," the Office of Special Programs Development discussed the possibility that this man's interest in helping his hometown was not unique; perhaps more employees would be interested in providing the same service to their local governments. It was decided to attempt the creation of a TVS made up of volunteers with specific technical skills who could be counted on to respond to community requests on their own time.

The benefits of such a TVS are many: Local government obtains a technical competence it otherwise cannot afford; NUSC functions, even more, as a part of the local community; research scientists and engineers experience altruistic gratification; and taxpayers get double value from their R&D expenditures.

This document outlines the steps followed at NUSC to implement TVS; but, first, the barriers that had to be overcome, the rationale for overcoming those barriers, and the results are discussed.

A cautionary note must, however, accompany the information. Supply and demand for this service must be carefully balanced so neither volunteers nor community users become disillusioned. The person selected to coordinate the program must guide TVS's community participation to ensure against volunteer involvement in highly politicized situations. TVS must be implemented with sensitivity since barriers of attitude, stereotypes, and misunderstanding might easily undermine the program's effectiveness.

BARRIERS, APPROACHES, AND RESULTS

1. Management Acceptance

Barrier: New programs of any type will not succeed unless top management can convince the more reluctant middle managers of the merit of such a program.

Approach: The Head of the Office of Special Programs Development presented the TVS concept to senior management using the example of NUSC's single civic-minded employee as evidence that such a program has the potential to work.

Result: Senior management approved a trial of the TVS program with these constraints: Don't make promises that cannot be fulfilled, and don't do anything to embarrass NUSC. Those constraints made NUSC's image the program's primary concern. Volunteer involvement became an instrument to enhance that image. This idea must be taken seriously by any volunteer coordinator since a volunteer, even on personal time, first represents NUSC to the public.

2. Negative Stereotypes and Attitudes

Barrier: TVS, from its very inception, had to challenge erroneous stereotypes and deal with many negative attitudes, for example,

- a. Civil servants have an antivolunteer mentality.
- b. Scientists won't give away skills they can sell.
- c. The work of an R&D laboratory is of such a highly technical nature that there will be no application to local government programs.
- d. Municipalities are suspicious of Federal help.
- e. No one will value a service they can obtain free.

Approach: Instead of ignoring these negative attitudes, the TVS implementation plan was designed to challenge them through education of people inside and outside the laboratory.

Result: The fact that a TVS has been successfully operating for 4 years testifies to the appropriateness and success of that approach.

3. Unfamiliarity With User Community.

Barrier: NUSC had no experience in dealing with local governments, making it difficult to determine which sectors should be targeted by TVS for assistance and how much help to provide.

Approach: It was decided that TVS would serve primarily state and local governments. Such service would be further limited to providing a technical dimension to local decision making or problem solving. In no case would NUSC assume total responsibility for a technical problem.

Result: Although it was regularly reiterated that the NUSC volunteer could not replace the consulting engineer, some municipalities misunderstood the function of TVS and believed that the volunteer engineer would, for example, design sewage-treatment plants, solve drainage problems, or write the town's future computer programs. It, therefore, was necessary to regularly restate that TVS could not be counted on to replace the consulting engineer. Current descriptions of the service indicate that a municipality retains the ultimate responsibility for their technical problems. NUSC volunteers only add a technical competence to the town's own team.

4. NUSC Readiness

Barrier: Since a volunteer service in a Federal R&D laboratory was a new idea, employees needed to be shown how volunteers could help, management needed to know that the help was positive for NUSC, and unions had to be informed that management was not trying to get something for nothing from employees.

Approach: Regular articles were printed in the NUSCOPE (an in-house newspaper) giving specific examples of transferred technology and demonstrating how science regularly helps the community. This information campaign spanned 4 months with an article appearing biweekly. (See appendix A.)

Result: The laboratory employees were familiarized with the concept of the TVS and made aware of its emphasis. They also understood the larger implications of volunteer technical assistance and were alerted to the fact that a TVS would be developed at NUSC.

5. Employee Reluctance

Barrier: Civil servants, some of whom might be wary of volunteerism, might refuse to respond.

Approach: A simple, low key, direct mail solicitation was developed. With a minimum of pressure, every employee was given the opportunity to join the TVS. The solicitation letter included examples of potential areas that could use technical help.

Result: This low key solicitation, predicted to produce 40 volunteers from a 3000 employee population, actually received 181 positive responses the first week. The program tapped an apparent employee need.

6. User Reluctance.

Barrier: Municipalities know nothing substantive about NUSC. The announcement of a volunteer service might be a surprise and generate suspicion as to the purpose of the program.

Approach: A direct mail announcement was sent to municipalities in Connecticut and Rhode Island (each of which has a NUSC laboratory) and Massachusetts. Addresses were obtained through the state municipal leagues. The municipal leagues were also encouraged "to broker" technical problems to NUSC's TVS. A short description of the program was given for inclusion in their newsletters.

Result: Although (1) requests were received from towns too far from either of the NUSC laboratories to enable volunteers to respond and (2) requestors asked for too much help (designing a sewer system) or low skill levels (someone to answer telephones while a secretary is on vacation), continuous and regular personal interaction helped resolve such mixups. Once the program's limitations were understood by the requestors, TVS was able to function effectively. Completed projects were highly publicized in a volunteer newsletter (*Grey Underground*, appendix B), which received wide distribution. Also, this newsletter served to educate other communities as to what they might expect from the TVS and update volunteers on what their peers were doing. Worthwhile projects effectively performed are the best advertisement that can be circulated about TVS. Reluctant municipal participants follow suit when they realize the technical benefits they are losing.

7. Supply and Demand.

Barriers:

- a. Volunteers, unless called upon to help, will lose interest in the program.
- b. Communities who cannot get help within a reasonable time will not continue to use the service.

Approach: A skills bank, which keeps data on potential volunteers, attempts to utilize all of an individual's talents. The NUSC volunteer newsletter, *Grey Underground*, documents requests, provides data on current projects, new products, etc. Volunteers are asked to contribute information. Through this medium both the volunteers and communities are reminded that they are not forgotten.

Result: Volunteers feel involved even when they have no assignment. They understand the range of projects, gather information on innovations, call other volunteers to offer assistance, and expect that a project will soon come up that requires their skills.

8. Problem Definition.

Barrier: A nontechnical municipal employee cannot always define a technical problem to an engineer. If that employee meets the engineer too early in the request stage, he may drop the problem rather than appear uninformed.

Approaches:

a. The municipal employee's first contact for assistance is the volunteer coordinator, a nontechnical person with good communication skills, who then determines which scientific specialist should provide the assistance.

b. Next, the volunteer coordinator speaks directly to the technical volunteer. Together they determine whether the problem is correctly categorized, i.e., communications, computer applications, hardware, systems analysis, etc. If the volunteer is deemed to have the necessary knowledge, he or she is asked to make a further, more technical, assessment of the problem. At this point, the volunteer is cautioned that nontechnical people may misinterpret a problem's cause. Diplomacy is encouraged to get technical details without offending the requestor.

c. When the technical volunteer confers again with the volunteer coordinator, a decision is then jointly made whether the volunteer has the skill, time, and desire to carry out the project, and if the problem is within the guidelines of NUSC's TVS.

Result: Much of the intensity is discharged from the scientist-requestor interaction. The requestor, reassured at having made the problem understood by the volunteer coordinator, feels freer to expand on the nature of the problem to the technical volunteer.

9. Political Alignments

Barrier: Dealing with municipalities means dealing with politicians; however, the TVS must avoid any political alignment.

Approach: The volunteer coordinator must be selective in the commitments made to ensure that there are no political overtones; otherwise, NUSC's integrity might be compromised. The chief administrative officer is always made cognizant of any TVS effort being conducted in the community.

Result: The task of the volunteer coordinator is to develop projects that meet the needs of the communities and the desires of the volunteers without embroiling NUSC in a political controversy.

10. Updating

Barrier: It is difficult for one person to keep track of innovations in every technical field given the speed with which technology progresses. It is also difficult for one person to stay on top of developments in every community.

Approaches:

a. The volunteer coordinator must first possess broad general knowledge. It is equally essential that the coordinator develop a good working

relationship with a technical research librarian who, then, can research and forward to the coordinator information that would have TVS relevance.

b. The volunteer coordinator must remain active in the communities in order to stay abreast of new developments and municipal interests. Those who develop a good reputation as TVS brokers are constantly alert to innovative information, ideas, and people who might prove useful to the program in the future.

c. Volunteers are encouraged to send pertinent new and innovative ideas to the volunteer coordinator for publication in the newsletter and to pass on information about problems in their own communities. This gives volunteers a feeling of participation.

Result: The TVS maintains vitality through constant attention to change. It also benefits from inputs from a diversity of sources.

11. Recognition

Barrier: Currently there is no money assigned within the Federal laboratory system for the testimonial dinners, trophies, awards parties, or mini-grants currently used by the nation's corporations to thank volunteers for their contributions of personal time and effort.

Approach: Letters of appreciation from municipalities that have benefitted from TVS are directed to the Commanding Officer of NUSC who then adds his personal regards, sends a copy to the volunteer, has the letter published in the in-house newspaper (NUSCOPE), and directs a final copy to the employee's personnel jacket. Notice of volunteer projects is, of course, also published monthly in the *Grey Underground*.

Results:

a. The Commanding Officer becomes knowledgeable about volunteer projects.

b. The volunteer's work is recognized by every NUSC employee, not just by fellow volunteers. A permanent record exists documenting the employees' community efforts for future supervisors.

c. Successful volunteer projects encourage new participants to volunteer.

12. Paperwork

Barrier: If record keeping becomes too complicated, the volunteer coordinator would be rendered ineffective by paperwork.

Approaches:

a. Volunteer survey forms are kept in a file for reference when a request comes in. Because the number of volunteers is under 400, it has not been considered cost effective nor efficient to put the information on a microcomputer.

b. Technical requests are handwritten and filled out by the volunteer. These forms create the record of the TVS transaction both for the Navy, which requires a biennial report, and for reference when the same problem comes up again.

Result: Without onerous amounts of paperwork, the volunteer coordinator's time is spent developing projects, meeting with local officials, and forwarding innovation information to the appropriate sources.

IMPLEMENTING TVS

The following is a sequential series of steps that could serve as a checklist for implementing TVS:

1. To familiarize NUSC employees with TVS, considerable use was made of the NUSCOPE, the in-house newspaper. Promotional articles, announcements, in-depth reports of completed projects, all were included to heighten awareness of the objectives of TVS.

2. A survey form was prepared and circulated to determine the interest of NUSC employees in contributing their time and knowledge to TVS. (See figures 1, 2, and 3.) This survey asked the employee for pertinent data: name, code, business location, phone number, and education. In addition, information about hobbies and interests was requested. This was found to be invaluable. Often people are as capable in a hobby or avocation as they are in areas of training or education. Experience has proved that this type of information increases the ability of the TVS coordinator to make a good match of the specialist to the task.

3. Upon return of the survey forms, a mailing list consisting of those interested in joining TVS was established. Next, computer-generated address labels were prepared. These labels were duplicated in sets of 12's for future mailing of TVS-related information.

4. The information supplied on the survey sheets was categorized. From this, it was possible to obtain several levels of information: education, special interests, hobbies, assignment desired, etc. This allows the TVS coordinator to determine which person would be capable of resolving a particular problem.

5. With a defined group of volunteers available, TVS was ready to fulfill its function--assist local governments in resolving problems. The TVS coordinator prepared a letter announcing the inception of TVS and mailed it to the chief administrative officers of every town in the three-state area of Connecticut, Rhode Island, and Massachusetts where NUSC employees resided. (See figures 4 and 5.) It stressed that volunteers were available who would provide technical assistance to their communities, but were in no way in competition with private enterprise and would work on their own time. It also suggested that the volunteers could, for example, provide advice on how to select two-way radios, how to prepare bid specifications, or how to solve acoustic problems. Next, formal liaisons were established with city leagues in the three states so that requests for assistance in resolving technically based problems could be channeled from them to the TVS coordinator at NUSC, and then to the NUSC volunteer for resolution of the problem.

6. The TVS coordinator studies a technical request sent by a local community. Next, the request is routed to a NUSC TVS volunteer for another, more in-depth, evaluation to determine whether it is within the scope of the onboard technical expertise. Then, a volunteer is requested to assist the community. (Should it be judged that qualified people are not available at NUSC, the coordinator may offer alternative approaches to the community.)

7. Once the volunteers accept the responsibility for assisting a community, a meeting between local officials and volunteers is scheduled to design a solution that is mutually agreeable. The volunteers can be allowed considerable freedom because their credentials are checked by a supervisor or someone familiar with their abilities before an assignment is made.

TECHNOLOGY TRANSFER SURVEY

NAME: _____ CODE: _____

DEPARTMENT: _____ BUILDING: _____ PHONE: _____

TOWN OF RESIDENCE: _____

EDUCATION: _____

(Degrees): _____

OTHER TRAINING: _____

(i.e., Volunteer fireman, special
equipment use). _____

HOBBIES: _____

SPECIAL INTEREST AREAS: _____

ORGANIZATIONS: _____

(Professional and civic) _____

WOULD YOU BE INTERESTED IN:

	YES	NO
1. 1-2 year Intergovernmental Personnel Act (IPA) Assignment (may involve change of residence).	_____	_____
2. 1-2 year IPA Assignment (local).	_____	_____
3. Part-time local assignment.	_____	_____
4. Would you volunteer your own time to		
a. Own town?	_____	_____
b. Neighboring town?	_____	_____
5. Would you like to have more information on the Technology Transfer Program?	_____	_____
6. Would you like to be included on the mailing list for Technology Transfer?	_____	_____

Figure 1. Technology Transfer Survey

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2 June 1978

MEMORANDUM

From: Office of Special Programs Development, Code 0702
To: Distribution List
Subj: Survey pertaining to interests of NUSC employees.

The Technology Transfer (T²) program at NUSC is expanding. Six technology agents are presently on IPA assignments in Vancouver, Wash., Kettering, Ohio, New York City, Providence, R.I., New Haven, CT, and E. Providence, R.I. Locally, Waterford, Groton, Old Lyme and other combined communities are being assisted by the knowledge of NUSC employees. Cancer research and problems of the blind and handicapped are being addressed through scientific expertise developed in regular mission oriented research.

The attached survey seeks to measure the potential interest of other NUSC employees in this career broadening experience.

General areas of technology transfer now being investigated by T² include:

- Air and Water Pollution Control
- Environmental Engineering
- Communications and Information Theory
- Computer Applications
- Electric Power Production and Transmission
- Energy Conservation
- Inventory Control
- Law Enforcement and Criminal Justice
- Noise Abatement
- Ocean Technology
- Prosthetics and Mechanical Organs
- Remote Sensing
- Seismic Detection
- Fire, Police, and Emergency Services
- Management Practice and Information
- Personnel Management
- Manpower Studies
- Research Program Administration
- Fisheries and Aquaculture
- Biomedical Engineering and Instrumentation
- Acoustic Detection
- Electrotechnology
- Operations Research
- Problem Solving for State and Local Governments

If you see an area where your knowledge might serve others, or even your own community, please indicate by returning the survey sheet. If you have a special interest not listed, please include.

TD 6719

Much excitement has been generated by those already on assignment who receive personal satisfaction through application of their speciality to the public sector.

Survey sheets should be returned to Donna J. Mansfield, Code 0702, Bldg. 80T. Questions may be referred to her at X-2116.

J. E. Atkinson
Head, Office of Special
Programs Development

Figure 2. Survey Pertaining to Interests of NUSC Employees (Cont'd)

28 July 1978

MEMORANDUM

From: J. E. Atkinson, Head, Office of Special Programs Development
To: Technology Transfer Survey Respondents

Thank you for responding to the recent Technology Transfer (T²) survey. T² is pleased that so many people with diversified skills and interest have shown a willingness to serve the public sector.

The program we are developing is new. Like everything original, it takes time to coordinate all the facets but we want to keep you posted on our progress.

Your responses have enabled us to initiate a Technical Volunteer Service. This service provides a force of technically oriented personnel which will be matched to community needs as they are identified.

Information on your returned survey sheets will be compiled on a microcomputer by skill, home town and area of interest.

During the month of August, we plan two workshops for Connecticut and Rhode Island government officials. The first, on computer graphics, will be held at NUSC, New London. The second, on budget allocation systems, will take place at Mohegan Community College in Norwich, CT. The hope is that these workshops will be the first in a series, will expand to include a broader geographical range (for those of you who live in Massachusetts), and will initiate a technology link with colleges and universities.

As part of these workshops, officials will be asked to fill out a "needs list" highlighting areas where technical assistance is required.

When problems are identified, the T² staff can go to the computer and see who we might have on board to help. Our function, therefore, would be technical brokerage.

Depending on the size of the job, it will be explained to local government people that small tasks can be accomplished free of charge on the employee's volunteered own time. Larger projects will be charged on a prearranged rate and must be scheduled so as not to interfere with mission oriented work.

For those of you interested in the longer term Intergovernmental Personnel Act assignments, we now have five technology agents on field assignment; final interviews for another position are presently underway, and we are advertising for another. These positions are being developed steadily. Please read the NUSC Bulletin where notices for available openings are posted.

Be advised that we are acting upon your responses. Silence on our part means not that we have forgotten you but that we are busy developing the system to utilize your skills.

JAMES E. ATKINSON

Figure 3. Letter to Technology Transfer Survey Respondents

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80702-130

20 July 1978

To: Mayors, First Selectmen, Managers
From: Donna J. Mansfield
Office of Special Programs Development
Naval Underwater Systems Center
New London, CT 06320

NUSC is a research and development center. As such, it requires a technical work force of engineers, physicists, chemists, oceanographers, computer specialists, systems analysts, inventory control experts, and many other disciplines.

The Office of Special Programs Development, more familiarly known as Technology Transfer Office, is tasked with the mission of making available NUSC's expertise to state and local government.

Projects already completed or underway include assisting police departments with radio communications equipment, budget control system development, building acoustic studies, emergency dispatch system evaluation, computerized inventory control, and design of forms for employee time keeping.

Our program is expanding to include college and university personnel among available expertise. Our hope is to establish a reservoir of technical experts, to be known as our Technical Volunteer Service, to which local officials can turn when faced with a problem. This service identifies employees in our Center according to expertise and interest.

Should you have a technical problem which falls into any of the areas on the attached list, please phone me to discuss the matter.

Many of our volunteers have agreed to donate their time. If your project requires considerable time and effort, however, it may be necessary to set a prearranged rate for the work.

If our files show no appropriate volunteer, we are willing to advertise in-house to our 3,000 Center employees. We would screen the volunteer but the final decision for assignment to your project would remain with you.

Should you wish to discuss the Technical Volunteer Service in more detail, please feel free to call me at 442-0771, X-2116.

Cordially,

DONNA J. MANSFIELD
Office of Special Programs
Development

Figure 4. Letter Mailed to Public Officials Announcing TVS

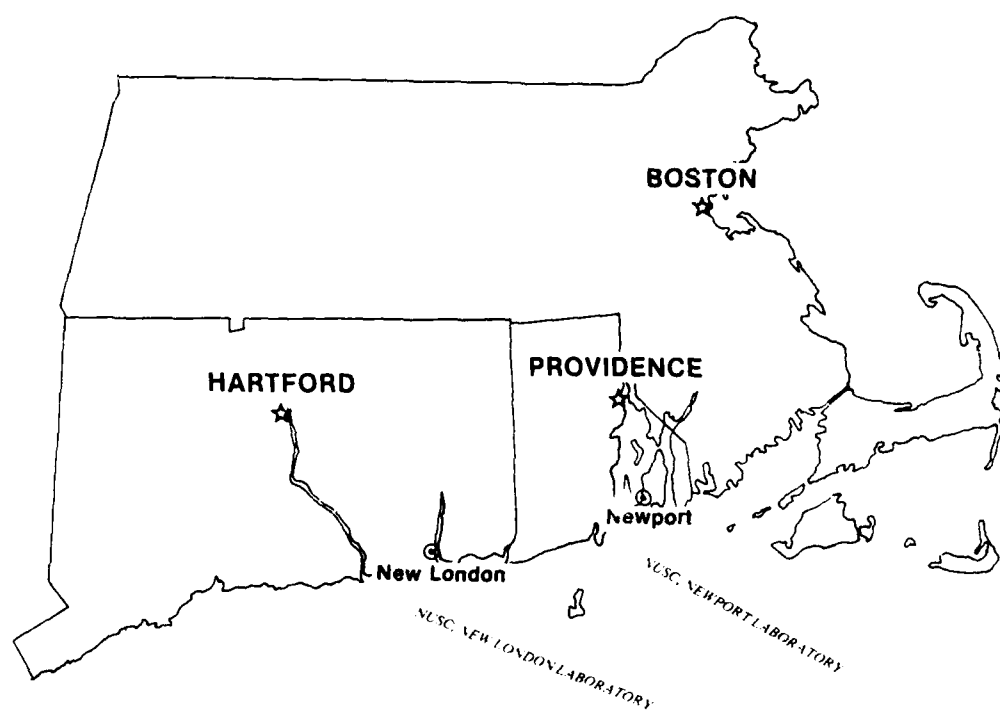


Figure 5. Tri-State Area Served by NUSC's TVS

8. A form was designed to record progress and document the solution. (See figure 6.) Documenting the solution is worth the effort; should the same type of problem arise, the solution is at hand. Also, the volunteer presents this detailed report to the coordinator when the project is completed. When this form arrives, it is a signal for the TVS coordinator to ask for an official thank you to the commanding officer in behalf of the volunteer's efforts.

Why does TVS work so well at NUSC? There could be several reasons: The commanding officer supports the effort; the communities dealt with are small, allowing a great deal of visibility; employees are community spirited; and new programs are not planned without establishing a need first.

In 1980, TVS was expanded to include retired NUSC employees. (See figure 7.) They would handle projects that, while appropriate to the volunteer effort and NUSC's area of expertise, were too time consuming for the employed volunteer. Many of these retired volunteers are ham radio operators. They remind each other of meetings via the air waves and have even contacted their peers in Florida to obtain information.

The method utilized by the TVS retirees in assisting their communities differs slightly from that employed by the regular volunteers: The retirees hold a meeting once a month, usually at a town hall chosen on a rotating basis. There the community officials and department heads can meet directly with the retirees, become familiar with their abilities, and discuss at length the problems that they would like to have resolved. Except for these differences, the routine employed in assigning a volunteer to assist a community is the same for both the retired and employed TVS member.

NUSC retirees have access to the NUSC library and equipment. A system has been initiated that requires only a phone call to announce the retirees' intention to visit NUSC to gather information or borrow equipment. (Security is alerted and notes where the retiree will be.) But also as important, the retirees have an opportunity to speak with other scientists who may have ideas on up-to-date solutions to specific technical problems.

A newsletter, the *Grey Underground* (see appendix B), is issued monthly and sent to all employed and retired TVS volunteers, municipal officials, and any others who request to be kept up to date on TVS. The function of the newsletter is multidimensional. It alerts the volunteers as to what is being done. It keeps municipal officials abreast of solutions that are being carried out for their towns. It also introduces technology and innovations that are occurring in other parts of the country, as well as around the world.

EXAMPLES OF TVS APPLICATION

Here are examples of how TVS helps:

1. An engineer responded to the request of an assistant city manager to evaluate whether a siren system under consideration would fulfill the city's requirements. The siren was found to be adequate.
2. A public works director was considering the purchase of some expensive very high technology leak-location equipment (for buried pipes). He was unsure as to the performance of the equipment and whether his nontechnical staff could be

NUSC TECHNICAL REQUEST

INQUIRY DATE:

ASSIGNED ANALYST: _____ COMPUTER KEY WORDS: _____

COMPUTER KEY WORDS:

REQUESTOR: _____ TELEPHONE () _____

TELEPHONE ()

ADDRESS: _____

REQUEST RECEIVED VIA: PHONE (): MAIL (): PERSONAL VISIT ()

PHONE (): MAIL (): PERSONAL VISIT ()

MAIL (): PERSONAL VISIT ()

PERSONAL VISIT ()

SUBJECT:

DETAILED DESCRIPTION:

INQUIRY ACTION:

RESPONSE TO REQUESTOR:

DATE: METHOD: PHONE (): MAIL (): PERSONAL VISIT ()

METHOD: PHONE (): MAIL (): PERSONAL VISIT ()

PHONE (): MAIL (): PERSONAL VISIT ()

MAIL (): PERSONAL VISIT ()

PERSONAL VISIT ()

Figure 6. TVS Progress Monitoring Form

TECHNOLOGY TRANSFER
RETIREE SURVEY

NAME: _____ ADDRESS: _____

PHONE: _____

TOWN OF RESIDENCE: _____

EDUCATION: _____

(Degrees): _____

OTHER TRAINING: _____

(i.e., Volunteer Fireman, special
equipment use): _____

HOBBIES: _____

SPECIAL INTEREST AREAS: _____

ORGANIZATIONS: _____

(Professional and civic): _____

WOULD YOU BE INTERESTED IN:

	<u>Yes</u>	<u>NO</u>
1. Volunteering your time to		
a. own town	_____	_____
b. own state	_____	_____
c. neighboring town	_____	_____
d. neighboring state	_____	_____
e. another part of the country	_____	_____
2. Will you need reimbursement?		
If yes,		
reimbursement for time	_____	_____
reimbursement for mileage	_____	_____
reimbursement for travel	_____	_____
reimbursement for lodging	_____	_____

Figure 7. TVS Retiree Survey

-2-

- | | <u>YES</u> | <u>NO</u> |
|---|------------|-----------|
| 3. Do you have a regularly scheduled vacation time? | — | — |
| If yes, please list dates you would not be available. | | |
| _____ | | |
| 4. Do you have any physical restrictions to the work you can perform? | — | — |
| If yes, list restrictions. | | |
| _____ | | |
| _____ | | |
| _____ | | |
| 5. Do you have your own transportation? | — | — |

Figure 7. TVS Retiree Survey (Cont'd)

trained to use it. A retiree skilled in sound-measurement technology attended the vendor presentation, asked pertinent questions, and then was able to assure the director that the product performed as advertised. This retiree will also help train town employees in use of the equipment.

3. A town administrative aide was requested to draw up specifications for a new public address system to be used in the town meeting room. However, there were unsolved acoustic problems in that room for many years. He requested NUSC's recommendations for improving the acoustics so that any new equipment could function optimally. A NUSC volunteer versed in acoustics tested conditions and made recommendations to solve the problem. A technician then specified the kind of public address equipment required. The town official could now write his bid specifications.

4. The NUSC Energy Coordinator, recently returned from a 3-year assignment to the Rhode Island Governor's Energy Office, trained retirees at NUSC's New London and Newport laboratories how to do lighting audits as an energy conservation measure. The volunteers will audit municipal buildings in their home communities free of charge. (They may also choose to add to their income by doing lighting audits for corporations.)

5. A 24-year old cerebral palsy victim now has a talking computer thanks, in part, to the efforts of TVS. A local Rotary Club and a National Guard unit paid for the hardware and NUSC personnel donated programming and adaptive engineering skills to customize it for her disabilities.

These are but a few of the hundreds of projects TVS takes on in Connecticut, Rhode Island, and Massachusetts.

SUMMARY

In recapping almost 4 years of TVS operation at NUSC, there seem to be several reasons for its success:

1. The service was not announced until a sufficient diversity of technical specialties became available to handle a broad range of problems.

2. Program promotion focused on highlighting skilled people, not esoteric specialties that would cause community leaders to miss the point.

3. As soon as examples were available of how sophisticated expertise could be applied to local problems, those examples were documented. Thus, successful examples were used to generate other ideas and new applications by the very people who use them--the local community officials.

4. The volunteer was not touted as the total problem solver. Instead, he was considered as someone who could add a dimension of technical expertise that the town could not otherwise afford.

5. As are local governments, NUSC is a noncommercial consumer of products and services. The expertise of NUSC personnel in the evaluation of technical products and services for the laboratory's needs translates into volunteers' unbiased assessments of potential solutions to community problems.

6. The community has the final say regarding any recommendations made by the TVS volunteer.

7. The small-community focus of TVS serves as its best advertisement. Often a volunteer brings a problem to the attention of the TVS coordinator, rather than vice versa. Volunteers are aware that help is available and work to ensure that their home communities get every possible benefit from TVS.

In essence, the goal of TVS is to benefit the community by the sharing of skills, information, and equipment that taxpayers have already purchased for another purpose. It applies the abundance of scientific minds to the technically based problems of the local community.

A TVS at every Federal laboratory, each with its diversity of specialized training and resources, could help considerably in the solution of community problems nationwide. A good start has been made in this direction.

Here are just a few of the laboratories actively engaged in establishing their own TVS: Lawrence Livermore National Laboratory, Livermore, CA; the Naval Air Development Center, Warminster, PA; David Taylor Naval Ship R&D Center, Bethesda, MD; Harry Diamond Laboratory, Adelphi, MD; Los Alamos National Laboratory, Los Alamos, NM; the Army's Cold Regions Research and Engineering Laboratory, Hanover, NH; and the Army's Natick Laboratories, Natick, MA.

The resources are there and interest and need have been demonstrated in 4 years of operation of the TVS at NUSC. It is especially encouraging to see the transfer of the idea of TVS to other Federal R&D facilities.

Appendix A

NUSCOPE ARTICLES

Technology Transfer Announces Technical Volunteer Service

The response to the survey distributed recently by the Office of Special Programs Development, Code 0702, was excellent. Many employees indicated that they were willing to donate their time to solve the technical problems of area towns.

As a result, a Technical Volunteer Service is being established. Employees have been identified in terms of their areas of expertise, interest, and hometown, and a letter will be mailed to 169 Connecticut and 37 Rhode

Island towns requesting that they outline current and future technical assistance requirements.

Town officials will be informed that small tasks could utilize volunteer time. Extensive projects would be charged on a prearranged rate basis and would be scheduled to avoid conflict with NUSC mission-related work.

The Technical Volunteer Service will provide a reservoir of technical expertise which can be tapped by gov-

(continued on page 2)

to town problems.

NUSC continues its role as lead laboratory in the Technology Transfer process, and has repeatedly been singled out for praise regarding the active manner in which it addresses local problems, but the T program is only as good as the individuals who participate. NUSC is fortunate in having dedicated experts concerned about community improvement.

ernment officials in the two-state area should a problem requiring a specific type of aid arise. In addition, a link is being developed with colleges and universities to cover locales outside NUSC's range and specialties.

The Office of Special Programs Development, more familiarly known as Technology Transfer, will screen and match volunteers

NUSC — A Model for Volunteer Service

With budget cuts and increasing deficits becoming the order of the day at Federal, state and local government levels, volunteers may well become the "shock troops" of the future who can be called upon to provide a host of services that communities and organizations can no longer afford.

The Naval Underwater Systems Center has had a Technical Volunteer Service for several years that might well serve as a model for the type of volunteerism that will help slow the decline in services that threaten to develop. Since the mid-1970's the Center has provided a wide and varied number of services to various communities and groups on a volunteer basis through the Technical Volunteer Service.

The informal beginning can probably be traced to the work of Harrison Fortier, a NUSC employee who has since retired. He enlisted the aid of other staff members in assisting the town of Waterford, CT, with several problems in the radio communications area and computer usage. The services were provided on a not-to-interfere basis by employees who volunteered their time and

In 1978 Donna Mansfield was hired by NUSC and assigned to the Technology Transfer Office to seek ways to expand and institutionalize these types of services, if possible. Her background included many contacts and experience with volunteer groups, business and local government.

Early Attempts

Early attempts to find ways to extend NUSC expertise into the community centered on a number of workshops for municipal officials and their employees, but a decision was quickly made to attempt to recruit candidates from the Center's staff for a volunteer service that could be matched more specifically to the needs of the communities. The hope was that having a volunteer work on a problem in their own town or city would act as an extra incentive and give a greater sense of satisfaction.

The call for volunteers went out and NUSC employees responded with enthusiasm. That the service is a success is no longer in doubt. The Technical Volunteer Service at NUSC quickly reached a level of about 180. Then, in 1980, a decision was made to attempt to enlist NUSC retirees who took with them into retirement a variety of talents, and many of whom now had the time to devote to volunteer undertakings. As a result there are now about 60 retirees from both Newport and New London who are available to help with problems that range from the simple to the complex and time-consuming.

All told, the number of volunteers who have made themselves available to the Technical Volunteer Service now stands at about 350. The success of the program has resulted in many other government laboratories, through the Technical Transfer Program and the Federal Laboratory Consortium, requesting information about how the NUSC service works and how they

can go about setting up a similar service.

Lawrence Livermore National Laboratory in California and the Naval Air Development Center are only two of those who have become actively engaged in establishing their own volunteer groups. In addition, the Naval Material Command has recently provided \$30,000 to NUSC to help in spreading the word to other laboratories about how the system works.

Examples

What sort of assistance do the NUSC volunteers and retirees give? Examples are far too numerous to list in a limited space, but they range from the "quick and simple" to the complex and long-term. For instance, two volunteers have fixed a malfunctioning system in a local high school; acoustic problems have been solved for high schools, municipal buildings and the Coast Guard Academy; a personnel expert assisted a Connecticut community in developing an affirmative action program; assistance has been provided to police and fire departments in the area of technical oversight to evaluate bid responses from volunteer tutors math students at a public library one or two nights a week; and recently several volunteers assisted a rehabilitation workshop in re-vamping 40 drafting tables to form flat work benches for production line work; several sophisticated electronic devices to assist the handicapped have been developed, and one volunteer has received national recognition for his work on one such device.

(Cont'd on p. A-4)

Volunteers

The list goes on and on. It could — and does — fill many pages just with NUSC staff member volunteer activities only. The retirees, although their organization was formed more recently, have also compiled an impressive list of accomplishments. One developed a hypothetical Planning Department for a Rhode Island community, including the writing of position descriptions and the establishment of managerial priorities; another studied newly manufactured leak detection equipment to see how effective it could be in detecting underground leaks and will train municipal employees in its use; still another combed through the Federal Excess Equipment list looking for items his municipality might use.

In addition to providing direct assistance by the volunteers, the Technical Volunteer Service office collects a vast amount of information on various innovations and products that can be of assistance to someone attempting to solve a problem, and acts as a clearing house for the exchange of information. These ideas and products are not from the U.S. alone — a surprising amount of information is collected and passed along from cities and countries around the world that

are working on their own problems. All of this information is available to volunteers, municipalities and organizations needing it.

As word of NUSC's Volunteer Service spreads because of their work, more and more requests are coming in from the state and national level for information on how the program is set up and how it is handled. The Administration on Aging of the Health and Human Services Department has shown interest in exploring the aspect of retirees volunteering their expertise, for instance.

As the need increases for the type of services and skills which NUSC staff members can provide, more volunteers will be required and welcome. Anyone interested in obtaining more information about the program or in signing up as a volunteer can contact Donna Mansfield in New London on X4603.



Harrison Fortier, a retired staff member from the New London Laboratory, is NUSC's "Volunteer of the Year". He is shown accepting a citation from Captain Alles in ceremonies held on April 22nd. Fortier is credited with being the inspiration for NUSC's Technical Volunteer Service which now numbers nearly 350 persons.

NUSC Volunteers Serve Their Community

The Technical Volunteer Service is perking away like the coffeepot on the back of Grandma's wood stove.

TVS provides a friendly, low key hook-up between Center employees who have developed specific skills through their jobs, community activities or hobbies, and the public sector people who need help.

The system usually works this way. A letter or phone call is received by the Technology Transfer staff, and reference is made to the file of over 150 employee volunteers to see whose background matches the request. A phone call is then placed to the employee asking that they contact the requestor to assess the problem in greater depth.

Many times this one phone call is all that is necessary. Because employees are familiar with the problem area they can quickly assess whether NUSC can help or not. If not, they make solid referrals to sources which can solve the specific problem.

The requests are as varied as the places from which they come. Of the initial 30 technical requests, the staff has heard from the Puget Sound

area for navigational aids for their ferries; a Connecticut town needs help scheduling policemen to provide rank coverage on every shift; some one needs to know whether an automobile engine analyzer was available for under \$5K. A request for review of engineering computations came from a Conservation Commission. What happens when you take parking meters out of a downtown area in order to compete with shopping centers?

As unconnected as these problems are to the primary mission of the Naval Underwater Systems Center, NUSC is able to find answers to all of those questions by using the Technical Volunteer Service.

An element of fun pervades this project. The requests are generally simple and the solutions apparent to those in the know. As one employee put it when thanked for his assistance, "Not at all, please call me again—it's more fun than working!"

If you're a volunteer and haven't been contacted, please be patient. We haven't lost you... the solution you hold hasn't been asked for, yet.

NUSC Helps Solve Acoustic Problem

Extensive modifications made by the City of New London to the former St. Bernard's School complex resulted in an alteration of acoustic conditions which severely limits use of the auditorium there. Because of his experience with room acoustics, Dr. Rudolph Croteau, Code 327, was asked to investigate the problem under a Technology Transfer project.

Dr. Croteau conducted acoustic tests throughout the auditorium and presently is considering several corrective suggestions for the most cost effective manner to return the auditorium to full use.

This is another example of how even a small investment of time by a knowledgeable technical person can have significant results in solving community and local government problems.

Other NUSC staff members who would like to assist their town or city with technical problems can get further information by phoning Donna Mansfield, Code 0702, Ext. 2116, at the New London Laboratory.

T² Lends Aid To Old Lyme Budget Process

The town of Old Lyme, Conn., thanks to the efforts of Jim Shutt, Code 671, will now be able to determine how much money it spent snowplowing its roads last year, or the exact cost of its summer tennis program.

Mr. Wallace Moore, First Selectman in Old Lyme, turned for help to the Technology Transfer Office at NUSC when he realized his need for a system that would track discrete budget items.

The new Budget Allocations Control System, developed with an eye toward future computerization, gives the town management a continuous overview of departmental

budgets.

Mr. Moore, pleased with the results of his system, plans to implement it into his new fiscal budget this month. He made the Office of Special Programs Development aware of similar needs existing in other Connecticut small towns.

T² plans to conduct a workshop at NUSC New London for government officials from towns with populations under 10,000 and present the system for their consideration.

This project is another example of how a few hours work by a NUSC expert benefits the local community.



Linda Texceira explores new dimensions of her CORY system under the watchful eye of the system's designer, Les Cory.

Engineer Designs System to Aid the Handicapped

by Gary Steigerwald, 0223

The life of 24-year-old cerebral palsy victim Linda Texceira has been dramatically changed through the kindness of several Rhode Island groups and the dedicated efforts of a few men in particular.

Les Cory is an Associate Professor of Electrical Engineering at Southeastern Massachusetts University (SMU) who is currently working at the Naval Underwater Systems Center during a one-year sabbatical leave. While at NUSC, Cory is doing research on computer speech recognition for the Computer Operations Division, Information Services Department (Code 70).

He first heard about the Little Compton cerebral palsy victim from Gerry Elias, Code 71, division head. Elias, as President-Elect of the Tiverton-Little Compton Rotary Club, had been aware of Linda's condition, and he and his fellow Rotarians were trying to do something to enable her to communicate with others.

The severity of Linda's affliction has robbed her of control of her limbs and speech. When she was 14, her father developed a system whereby she "talked" by having her eye movements traced over a plexi-

glass panel on which was inscribed the alphabet and numbers. This process was slow, to say the least. It also required patience and a great deal of concentration and skill on the part of the reader. But before the "eye board" was developed, Linda had no way to communicate except to nod her head in a yes/no fashion.

Knowing her problem and Les' work in speech recognition and speech synthesis, Gerry asked Les to visit Linda and evaluate her ability to use a commercially produced communications system that the

(Cont'd on p. A-8)

Club was willing to buy. When first introduced to Linda, Les was skeptical of her capability to handle anything more complicated than the eye board. After a few visits though, Les was amazed at what he perceived to be a high degree of motivation and intelligence. During "conversations" with Linda, he learned of her dreams to finish her schooling, to talk to friends and to work for continuing educational opportunities for people with disabilities beyond age 21.

An historical note is probably called for here. In Rhode Island it is law that the State provide for the education of disabled people only through high school or until they reach their 21st birthday. State aid for education for Linda stopped three years ago.

Linda's concern to provide for others as well as herself touched Les so much that he immediately set about designing a system which would be able to fulfill her dream list. His immediate interest was not to design an exotic system which would have to be fabricated and carry an expensive price tag. His idea was a system made up of off-the-shelf hardware which could be mixed and matched to expand its capabilities as a need arose and funds became available. To complement this hardware he would write or purchase programs to satisfy his requirements.

Les' first obstacle was obtaining the basic hardware. Within a few days he took his problem to the 281st Combat Communications Group, Rhode Island National Guard where he is commanding

officer. Les' enthusiasm was picked up by the men and women of the Guard who responded with contributions sufficient to purchase a fully expanded Radio Shack TRS-80 home computer. The Rotarians, with funds already earmarked for Linda, were just as quick to purchase a line-printer, speech synthesizer, cables, and other equipment necessary to make the system work.

With basic hardware in place Les enlisted the assistance of Phil Viall, a 1981 SMU graduate now doing graduate work in computer science at Worcester Polytechnic Institute. Working 16 to 20 hour days, the two men were able to develop the necessary software in a remarkably short period of time. In under two weeks a crude (by the system's present standards) but efficient model was available for testing. Following 2 months of fine tuning, the promised system was complete.

All efforts could have ceased at this point, but they didn't. Linda's drive, enthusiasm and determination to master the system convinced Les that she was capable of handling an even more complex system.

The long and late hours of work Les was putting in at working on the system necessitated his having home access to the computer hardware. While his efforts were aimed at eventually increasing Linda's capabilities, his possession of the system prevented her from practicing and using the system. When a new or expanded capability was added, Les would pack up the system and drive out to Linda's house for a trial run. He would then

return it to his house for modification of the program or additional programming. Each new section of the program or piece of hardware was tested by Linda before Les added additional capabilities. It was Les' intention to develop the system to Linda's full capability. The problem was developing, however, that the computer was spending more time at Les' house and less time with Linda.

It soon became obvious that a second "duplicate" system was needed for use by Les.

Having a second system at his house would allow him to continue advanced development and give Linda the opportunity to use and develop her skills on the existing system.

In a chance of winning the top prize of a home computer, Les entered his most advanced system, unabashedly named the C(omputerized) R(apid) Y(ield) (CORY) word selector, at a regional fair of computer aids for the handicapped held in August at Boston's Museum of Science.

Although not selected by the judges as the winning entry, Les' system did generate a lot of interest from the media. In covering the computer fair, the Boston Globe featured Les' system over the prize-winning entries. The Fall River (MA) Herald News has run a feature about Les, Linda, and their system in its "Lifestyle" section, and Providence Television Channel 10 has also featured it on its news program. In November, Linda, Phil and Les captured most of the "Second Front Page" in the Providence Journal. On March 3rd, Linda, Les and Phil addressed a conference on

(Cont'd on p. A-9)

"Perspectives From the Physically Able and Disabled" in Providence. Most recently, inquiries have come from the Today Show and That's Incredible.

Failure to attain the duplicate computer has not dampened Les' spirit or drive. He has continued to develop and refine the CORY word selector so that it now goes beyond mere word selection.

A sample of the system's capabilities, all controlled by Linda using her head to tap a padded metal pole, include a vocabulary of over 1,700 words (all selected by Linda — she entered the last 400 herself); messages; rapid selection of letters, symbols, words, phrases, and messages; rapid screen-editing for composing messages up to 800 lines long; computer games and tutorials and even a calculator. Add-on equipment includes the line-printer for hard copies of messages and writing letters, and Rotary Club-purchased infinite speech synthesizer which allows Linda to "talk". Other optional devices will allow Linda to control lights and appliances, and even dial a telephone unassisted. These have been checked out, but not yet installed.

Les would like to have the time to work on the development of a device which would allow Linda to use her eye movements to control the computer. Such a device in use by a skilled operator should reduce reaction time to a fraction of what it now takes with the head bumping method.

"Love Linda"

The CORY system has been a rewarding experience for all involved. Martha Texeira, Linda's mother, will always remember the day that Linda used the voice synthesizer to deliver her first "Happy Birthday to Mom, Love, Linda". Linda is proud to show visitors a book report she is working on for a course being offered for special students by Salve Regina College. Les' reward is the friendship of a young woman whose life he has been able to positively influence and the letters she writes to him, regularly. Her first letter reads, in part, "Dear Les, You have made my life little more normal life because of people like you that help the disable people like me to communication with people without a handicap. God bless you, love Linda Texeira."

As a result of the favorable results and all the publicity Linda's system has generated, Les has received many inquiries from families and friends of individuals with severe disabilities. Inquiries have come from New Hampshire, New York, Kentucky and as far away as Texas and California. A second CORY system is scheduled for delivery to a youngster in New York this month.

After considerable thought Les and Phil have decided to establish a non-profit foundation for the purpose of distributing systems to individuals on an ability-to-pay basis.

It is estimated by Les that there are over 5,000 severely

disabled persons in the United States whose lives could be significantly improved by the CORY system.

The Technical Volunteer Service, under the Office of Special Programs Development, is being approached regularly by outside organizations that seek high technology applications for medical problems, and MUSC volunteers have indicated an interest in bio-medical engineering. In order to accommodate both groups the Technical Volunteer Service would like to establish working groups of volunteers at both laboratories where these applications could be presented in round-table fashion and, if appropriate, broken down into small specialist tasks for volunteers.

To initiate this program, the Center has invited Linda Texeira to attend meetings at both the Newport and New London Laboratories. At the meetings Les Cory and Gerry Elias will discuss how Linda's problem was addressed from a technical viewpoint. Also to be discussed will be current cases where help is needed and expectations of requests from other areas.

The meetings are scheduled for:

*Newport — May 10, 10:00 a.m.
Bldg. 990, Auditorium*

*New London — May 17
10:00 a.m., Bldg. 80*

Cafeteria Conference Room

Interested volunteers are invited to attend with permission of their supervisor.

Newporters cited for assisting local disabled persons

Eleven NUSC staffers were recently lauded by Captain John W. Ailes, IV, Commanding Officer, for their efforts in support of a Technical Volunteer Program that has been conducted at the Center via notification from Les Cory, NUSC Computer Division, who has been spearheading the effort.

Gerald J. Elias, Head, Computer Operations Division, was credited for lending invaluable assistance in providing devices and services to local disabled people, and was responsible for virtually all of the work that was done by Mr. Cory for and with disabled people.

Gregory Jones, Electro-Acoustics Branch, was cited for designing and fabricating a digital switching system to enable a disabled person to control several devices by means of one simple switch. This system will provide a local quadriplegic with the ability to independently control a reading lamp, a tape recorder, a television receiver and a help summoning device.

"Bliss Symbols"

Stanley M. Rubinski, Sub-Systems Development Branch, was commended with the programming of a microcomputer to enable a disabled user to communicate non-verbally using a unique scheme of special characters called "Bliss Symbols". Bliss Symbols are used by disabled people

who lack the ability to associate written words with their meanings.

Robert Szargowicz, Systems Design Section, was commended for designing an innovative phone cradle to enable a vocal quadriplegic to handle a multi-line telephone, a switch box to electrically isolate a user from a custom-designed, computerized system, and a special switch to enable a person with very limited strength and almost no coordination to operate a help summoning device.

Roger Hargrove, Systems Development and Computer Operations Branch, was involved with Mr. Cory in a number of projects to benefit local people who are disabled. It was noted his numerous contacts among technically skilled people on the Center, on and off, were invaluable. It was noted that a quadriplegic working at NUSC needed to be able to operate a particular switch on a computer terminal by means of a mouth stick. When no user suitable switch could be procured commercially, Mr. Hargrove arranged to have one fabricated on the Center.

George Panko II, Processing Systems Technology Branch, assisted with the needs of a young lady with cerebral palsy for educational software. Mr. Panko conducted a search of the literature and forwarded her references on dozens of useful programs.

Whistle Switch

Stephen S. Gilardi, Acoustic Warfare and Communication Systems Branch, recently devised a scheme for the modification of a commercially available whistle switch to make it into a device for use by a quadriplegic in controlling a television receiver.

John A. Sabulis, Scientific Applications Branch, constructed and expertly packaged a system to enable a young girl with cerebral palsy to dial and answer a standard telephone despite the fact that she cannot use her hands. She can now converse on the telephone via a computer-controlled synthesizer which she controls by pressing her head against a switch.

Thoms Riley, Head, Systems Design Section, was credited with designing and building an opto isolation circuit to enable a young boy in a New York hospital to control a computerized communications system that Mr. Cory had built. This boy, who has cerebral palsy and is unable to speak, now has an electronic voice.

Gladys D. Quick, Scientific Applications Branch, has been involved in a project to translate a very lengthy computer program from one computer language to another. Mrs. Quick has undertaken this project using her own personal computer to make the translation and test the results.

Adam Jilling, Non-Acoustic Effects Branch, designed and fabricated a sound-controlled switch which is being used as a rehabilitation tool by Mr. Cory in his work with disabled people who are unable to speak. The switch, in essence, converts otherwise meaningless sounds into control signals which enable a non-verbal person to communicate by means of a microcomputer. This device has been invaluable to Cory in his work with dysphonic individuals, particularly those who are either totally paralyzed or nearly so.

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Appendix B

GREY UNDERGROUND, NEWSLETTER

B-1

The Grey Underground
(Newsletter for the NUSC Technical Help Network)

April Retiree Meetings
Newport
Volunteer Seminar for Public Officials
Friday, April 16, 1982
Time & Place later

New London
Westerly City Hall
Wednesday, April 21, 1982
10:00 a.m. - 12:00 noon

1. NAV MAT has recognized the Technical Volunteer Service by appropriating money for the transfer of the idea to other laboratories. Well done, volunteers, well done. Your successful local efforts have been impressive.
2. For those who want to get further backup information from the Navy T² Fact Sheet, please use ID# 02175 and put your own address on the request form. I have been getting positive responses to this information so will keep sending it to you.
3. Connecticut College is asking NUSC to help strengthen the college's scientific dimensions. This will be done in several ways. Two adjunct appointments will be made from NUSC. These will carry a small yearly stipend and will entitle the appointee to attend Connecticut faculty meetings. If the adjunct professors actually teach a course, they will be paid at the part-time rate.

In addition, teams of three volunteers will be chosen to aid the chairmen of the Physics and Math Departments. These people will serve as advisors in matters of curriculum development, making recommendations where they feel the school could better prepare students for the work world.

NUSC volunteers will also participate along with other local organizations in a career seminar for sophomores. This will give the students a chance to interact directly to ask questions of people who are employed in different fields.

Also, the Physics Department particularly is looking for mentors for its students. We hope to have six people by fall who are willing to serve as a guide and sounding board for a bright student. Mentoring has benefits for the mentor also!!

Lastly, we will work with the Continuing Education Department and the school to arrange part-time teaching slots at convenient hours for our professional staff.

(Cont'd on p. B-3)

Conn is attempting to meet the challenge of a more technological future directly. NUSC employees with their highly developed skills and experience can help them in the areas of Math, Physics, Computer Science, and Management. Pfizer is being solicited to help with the Science and Chemistry Departments.

4. Russ McDonough (NL) has been appointed to the Advisory Board of Project Concern. This group works to help the prison inmates reacclimate to society after completing their sentence.

5. Paul Sullivan (those of you who get the Norwich Bulletin saw his picture in the paper!), Mike Sullivan, Stan Rupinsky, Dave Williams, Jack Griffin and team leader Alex Theodoru (all NL) have finished converting 40 drafting tables into flat work benches for use in the production line at the Easter Seal's Sheltered Workshop in Norwich.

6. Bob Warenda (NL) is helping a female Cadet at the Coast Guard Academy with information on sonar detection devices and possible techniques to determine cracks in concrete structures.

7. Rudy Croteau (NL) is back in the room acoustics business. Rudy and Mike Ahrens (NL) are helping the town of Stonington select baffling for the room where town meetings are held. Rick Denomme has provided recommendations for the purchase of public address equipment that would be correctly sized for the room.

8. Sometime back, a town reported to me they would like to sell their micro-film equipment. If that town is still interested please contact me. I have another municipal purchaser.

9. Kay Crosby (R) has designed a logo for the Technical Volunteer Service that is now in Graphics being made camera ready. She is also designing a logo for the Corporate Volunteer Committee in Hartford. That group serves as a forum to link resources within the community and the state. The Cancer Society is on her waiting list for a logo.

10. Charlie Drenzewski, (NL) is also working with the Cancer Society to help them streamline their paperwork and systems. The agency suffers from years of executive turnover. They are no longer sure which functions are crucial to the operation and which are done simply from habit.

11. Joe Vargas (R) will work with the YWCA to help them schedule their rooms efficiently.

12. Tom Wheeler, (NL) will address the statewide meeting of Connecticut Town Clerks on the subject of Computers (June 8).

13. The New Haven Voluntary Action Center and the Danbury YMCA were referred to their town representatives for furniture and perhaps the use of a temporary building from the State Excess Property.

14. One of NUSC's own has a problem she is seeking help with. Alby Johnson has a house leak. the water comes in over the side board. She has put on a

(Cont'd on p. B-4)

new roof, new siding, replanted the foundation plantings and had lots of professional "fix it" people in to solve the problem. After all this, the corner was still wet during the last rain storm. Her concern is potential foundation rot. This is an unusual request but if anyone has any ideas, Alby would appreciate the advice.

15. Tom Perella, (NPT) will help the New England Innovation Group select a word processing software package and to advise them how to incorporate their computer into the operational functioning.

16. Paul Miscisco (R) has been appointed a Westerly Federal Excess Equipment purchaser. Paul has agreed to be on the lookout for good items for other towns and non profit groups. If you need an item, please call Paul at (403) 596-5018 to get on his "wish list."

17. Roger Greenough (NL), John Fay (NL), and Don Farrington did an excellent job at the YWCA Sing-a-long. Many more singers are needed. Plans are being made for another session and to move the program outside during the summer.

18. The town of Stonington is considering the purchase of word processing equipment. They will talk to Carl Kindelien (NL) about how to assess their needs. If they decide to purchase, Roger Read will help them try out various kinds of hardware.

19. Jim Hazlin (NB) is making a cabinet for the speakers Fred Williams (NL) donated to a Colchester Nursing Home. This group effort means music for that home since Bernie Hemel already gave them the rest of a stereo system. Good coordination guys.

20. Ludwig Sorrentino (NL) has volunteered to rerun the solar hot water analysis that were mis-run in haste. The Energy Extension office, closed for lack of funds has the program. Can I get volunteers with TI programmable calculators to offer this service?

21. Connecticut is having a meeting April 20 to try to network stable resources for energy. Our volunteers may be called on to help in this effort.

22. Waterford had a leaking trailer roof. Les Greiner recommended a product to seal it.

23. The Federal Highway Administration has developed a computer traffic simulation program that can help state and city highway officials achieve savings in fuel consumption and design costs. Called NETSIM, more information can be provided by Richard Reilly, (202) 426-0660.

24. The Navy has designed a concrete sheath for underwater cables that follows the marine floor contour.

25. The Air Force Civil Engineering Center has done a study that tells the various percentages of waste fuel, oil, and lubricant that can be used to supplement heating plant fuel. More info anyone?

(Cont'd on p. B-5)

26. Electronic ballasts for fluorescent lamps dim and brighten in reaction to ambient light. Forty percent savings are predicted.

27. Arnold W. Rosenberg, W.A. Grace Company, Columbia, Maryland, was given a national innovators award for a concrete additive that protects steel reinforcing rods for up to 50 years.

28. Don Malaguti will serve on an advisory committee for the Greater New Bedford Regional Vocational Technical School's purchase of computer equipment.

29. London has introduced sponsored trash cans. Businesses subscribe to the program for \$130/ year and are allowed to advertise on their trash receptacle.

30. Space is at a premium in Japan's tightly packed cities where the average family home is about a third the size of its U.S. counterpart. What has kept the residential environment livable in these crowded conditions is employment of the same space for different functions at different times. It allows the same room to be used for eating, sleeping, study or entertainment with the accessories necessary for each function brought in and then removed and stored. An application of the "flexscape" concept to the public sector, one that saves scarce city resources and allows different population groups to use the same facility at different times is reported below from Kobe, a leader in civic innovation.

With Japan's population density one of the highest in the world and urban land consequently trading at inordinate cost, public authorities have found it extremely difficult to assemble adequate parcels for neighborhood parks and playgrounds. In deciding on the design of a new elementary school, Kobe city officials have developed a plan to ensure the most effective use of limited public space. Applying the "flexspace" principle, it provides for the multiple use of the same land and the same facilities by both students and the general public at different times of the day.

More than a third of the parcel accumulated for the school was made into a public park the use of which is reserved to students during school hours. Similarly, the school grounds and facilities are not reserved exclusively for students but are designed for shared use with the public. This has been accomplished by separating administrative offices and classrooms from those facilities, such as the library, meeting rooms, and the gymnasium which are intended for public use after school hours. These facilities, placed in adjacent buildings, separate the classroom area from the planned community of shops and high-rise housing which abuts the school on both sides. The division of function is also observed in the design of the classroom complex where a playground separates the classroom buildings devoted to the lower and upper grades.

31. Germany has developed new dual chamber garbage containers that allow source separation into the truck.

32. Germany has also developed a floating desalination plant for sea coast villages who need to make drinking water from sea water.

(Cont'd on p. B-6)

33. An anemometer is needed by Jim Gallagher for a study at East Lyme High School. Is there one around the lab to be borrowed?

34. The New England Innovation Group through this office has requested a volunteer to help create alternate financing for non-profit agencies who need capital to carry out energy conservation measures. Through our new network, this request was directed to the Hartford insurance companies who have much more expertise in financial matters.

35. I am now beginning to work with municipal department heads to train them how to use volunteers. On April 16, I will do a seminar for South County officials. I would like the NUSC Technical Volunteers Retired to attend that meeting instead of having our regular meeting. I will let you know the place and time by separate letter. (Rhode Island only)

36. Businesses and business organizations are beginning to look to NUSC employees for innovative ideas that our personnel are developing on their own time. If you have such an idea that might be appropriate for a high technology industrial park, an innovative process for industry, or a good idea you might be willing to share, let this office know.

37. Adam Jilling (NPT) has designed a voice actuated switching system for use by a disabled person in controlling a basic communications device. The user is capable of making sounds but cannot speak. The unit is part of a system Les Cory (NPT) is designing to convert unintelligible sounds into synthesized speech.

The switching system was built by Larry Chace, then an employee of OTI. Les Cory says the device is extremely useful as a diagnostic tool in his work with people with severe disabilities.

38. A Connecticut woman has been discovered in an institution; thought to be retarded, Les says recent tests have proved she is intelligent but needs a means to communicate. Anyone interested in working on this project???

39. I will be making a presentation in April for a New England regional meeting of municipal officials to tell them of our successful volunteer program and how we work with municipal officials.

40. The City of Fall River is interested in determining whether a Central Personnel Department would be cost effective in their city. They will make an appointment to talk with Joe Murphy about how to do the study. They also hope some of the Fall River retirees could help with the project.

Thank you for the continuing help!

DONNA MANSFIELD
Community Liaison Coordinator
(203) 447-4603



The Grey Underground

Newsletter for the NUSC Technical Volunteer Network

Due to vacation schedules there will be no August retirees meeting.

1. Small Towns Institute, hearing about the work of volunteers in Westerly, R. I. wants to do a comprehensive article about the TVS at NUSC.
2. Janet Polinsky, State Representative, is interested in having Rudy Croteau take a look at acoustics at the State House. It seems House members have trouble being heard during speeches. Rudy has so ably solved problems of this nature in the past.
3. Bob Hayford will volunteer to help Niantic State Prison personnel figure out some computer routines that have been puzzling them.
4. A copy of Linda Texceira's eyeboard is being presented by her father to S.E. Connecticut Easter Seal Rehabilitation Center. The director of this unit will explore its potential as a production item for the sheltered workshop.
5. Jeffrey Vuono, (NL) coop student, will do an acoustical study of the performance center at Westerly Center for the Arts. He will work under the direction of Rick Denomme and Rudy Croteau.
6. If anyone knows enterpreneurs out there, it seems two products emerging from federal R & D have good potential for commercialization. One is the Sippy Diet out of Natick; this liquid diet tastes like steak or even spaghetti and meatballs. It would be excellent for nursing homes, folks with broken jaws, or anyone who is ordered onto a liquid diet.

Cold Regions lab has a new paint that prevents ice adhesion. It can be used on antennas, submarine surfaces, etc. anywhere that a build-up of ice would be dangerous or reduce effectiveness.

Anyone interested in further information please call me.

(Cont'd on p. B-8)

7. Alex Theodoru, (NL) has completed phase one of his help to Westerly, R. I. They have ordered a computer. Mr. Miller indicated he was very pleased with the technical dimension Alex added to their study group.
8. Jim Davis, (NL) went with NEIG's Rick Regan to visit a Lawrence, MA food processing plant. Jim, NUSC's boiler expert, looked over the plant with an eye toward energy conservation.
9. George Panko, (NL) helped out the United Cerebral Palsy by building table fronts upon which Laura Bradley, a local artist, designed the CP logo. All work was in preparation for the organization's Annual Telethon.
10. Rick Walters is helping Tom Dembec, Waterford Civil Preparedness director outline his specifications for CP computer needs.
11. The National Technical Information Service has a new publication from National Bureau of Standards. It describes methods of suppressing electromagnetic interference affecting mobile radios. EMI caused by a vehicle's own electrical system, can seriously degrade the performance of mobile radios. Copies of methods of Suppressing Automotive Interference (SP 480 - 44) are available for \$6. prepaid from:

N T I S

Springfield, VA 22161

Reference PB#82-165259

12. The YWCA is seeking the following types of help:

Volunteer/Intern Descriptions

Group Leader - At Niantic Women's Prison, an individual to lead informal rap groups or specific activities (e.g., drama workshop) with small groups of prisoners for six to eight week sessions. No experience required.

Instructor - Finance Management - Someone to teach four to six week sessions in budgeting, financial management, smart money usage.

Public Relations - Someone to write press releases on programs, activities and topical pieces on women's or related issues. Also to do speaking engagements on YW programs.

Instructor - Physical Education - Either to teach six to eight week course, to assist Fitness Center Staff, or run satellite programs.

Group Leader/Counselor - To run rap group for teens (boys or girls or mixed), and possibly individual counselor.

Child Care Trainer/Worker - To teach Girl Scouts infant and child care and/or to staff drop-in day care center.

(Cont'd on p. B-9)

Facilities Planner - To explore and coordinate renovation of lower level institutional kitchen for use as snack bar and/or cooking classroom. Includes bringing area up to fire, health, handicap access codes.

General Carpenter - To build equipment (lockers & storage units) for day-care center. Also to install a chain link fence and play equipment.

Program Planner/Evaluator - To develop new programs for the YWCA; possibly including needs assessment of membership and community and to evaluate existing programs.

Promoter/Fund-Raiser - To coordinate publicity for Fitness Center and other programs, to run membership drive, and to staff fund-raising events.

Grant Writer - To research and develop foundations and other funding sources; to develop and write grant proposals for specific programs.

Plumber - To convert an existing bathroom to be handicap accessible.

Financial Planner/Adviser - To assist Board and Staff of Y in general budget planning; to critique fund raising methods and plan capital campaign.

Teen Program Coordinator - Person to work with area schools (Groton and New London) to develop a teen drop-in center at the Y, organize activities (dances, trips).

13. Rock Hill, S.C. is testing a new full scale fleet management system that operates on a desktop computer.

14. The City of Santa Maria, California has worked out an arrangement with Micro Time Sharing for placement of a "vending computer" in the library. The computer is available for use by the public at a cost of \$1. for 20 minutes. In exchange for providing space, the city is allowed use of the Apple II Plus system during off-peak hours at no cost. Some accounting and purchasing functions are already up and running. Santa Maria receives 5% of the income from the use of the computer by the public. Further info - Jack Buchanan, Librarian, 805-925-0951.

15. Crime Shoppers Catalog, a compendium of law enforcement technologies available through the Federal Laboratory Consortium is available from the Southwest Innovation Group, 200S. Anaheim Blvd. Suite 220, Anaheim, CA 9280S for \$9.

16. Tom Riley (NPT) has built a motion detector for disabled a woman injured seven years ago by a drunk driver. It is hoped that Tom's device will help her translate body movement into communication. At present she has no means of communication.

(Cont'd on p. B-10)

17. A new more energy efficient method of eliminating electroplate waste has been developed by LICON, a company backed by the U.S. Navy and DoE. The closed loop low pressure, low temperature system uses unique evaporator wastewater recycling methods. In this system, water, electroplating metals, and waste heat can all be reused. More information on this system can be provided by

Tectra Newsletter
School of Business and Public Admin.
Calif - State Univ.
Sacramento, CA 95819

Refer to newsletter (Vol 3. No 6.) dated June 8, 1982. Example A24-02.

18. Scott McCarthy, and Rother Hodges (NPT) were able to trouble shoot the malfunction of a German made cardio-pulmonary apparatus at the Univ. of Rhode Island.

19. The Apple Computer Company has a new program called Apple Blossom through which they donate Apple Computers to secondary schools. 1-800-538-9696 is the toll free number for more information.

20. An OTTO network technology agent has a client who has developed a process for the destructive distillation of used tires. The process yields carbon black and an oil similar to number 2 fuel oil. The client would like to discover new uses and markets for carbon black.

21. Ohio State is drafting a proposal to do research on how to weld powdered metal parts

22. Soldiers Grove, WI has passed new regulations that will require all homes be at least 50% solar. They are also working on the solar attic concept there, more info on solar attics can be obtained by writing to:

Lands Directorate
Environment Canada
Ottawa, Ontario KIAOE7

23. Bob Kline, an expert in waste water treatment and hazardous materials at the Naval Air Engineering Center has been available for questions around sewage treatment problems.

24. Cold Regions laboratory is writing a manual, along with Canadian experts, on how to design and build waste water treatment plants. They also have state of the art expertise in advanced waste water treatment and district heating.

25. CRREL can also address problems of ice adhesion. They also have a bubbler system that keeps waterways open. In addition, they have become skilled in the Finnish Method of storing logs in water throughout the winter (without the logs freezing in place) Cold Regions lab seems to have answers to any engineering problems having to do with cold.

(Cont'd on p. B-11)

26. Help! Home handymen!! The Easter Seal Rehab Center in Norwich needs an office constructed. (Sidewalls only, no heating or electrical work.) Mike Woodside has agreed to be crew boss. Can I please have four volunteers to help him? The job should be complete in a weekend and Easter Seals will supply materials.

27. The Blackstone Valley waste water commission is looking for some handholding while they decide among the several computer vendors who have made presentations. Located in E. Providence, the commission will reimburse a volunteer for gasoline.

28. Lawrence Livermore Laboratory has sent me a plan of development that indicates their intent to have a Technical Volunteer Service operational by Jan 1, 1983.

That's it for this month. Remember if you come across new ideas, innovative products, different processes that might be used to help municipalities, small business, or non-profit sector, please let me know so I can include it in the newsletter



Donna J. Mansfield
Community Liaison Coordinator
Code 0702, Bldg. 80-T
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The Grey Underground

Newsletter for the NUSC Technical Volunteer Network

Retiree Meetings:

New London, Thurs., Sept. 9
2:00 pm, Cafeteria Conf. Rm.

Newport, Mon., Sept. 13
10:00 am, Conf. Rm 102D

1. Thames Science Center sponsors a monthly children's series entitled Science Saturday. The aim is to bring children and their families in contact with scientists. Themes for the coming year include: astronomy, archeology, the human body, inventions, computers, aquaculture, man's animals, and soils.

Art Moorcroft (NL) and Steve Cox, coop student, have already volunteered to do a Saturday demonstration of microcomputers. If anyone else is interested in doing a program on that or another subject, please call me for further info.

2. There is a good article in the June 1982 issue of INC. magazine on "Copier Wars". It talks about what is available in copying machines, how to decide which machine you need, etc. It would be good information for municipal purchasing agents.

3. Technology Review also has an article that might interest many municipalities who are interested in redevelopment or revitalization. The article is entitled "Small Space is Beautiful" and it tells what to consider in the successful design of small parks to attract people. The article is in the July 1982 issue.

4. The Kawasaki plant in Lincoln, Nebraska, operates under the Japanese policy of providing secure employment for its workers. That means no layoffs in times of economic recession. As an alternative, Kawasaki has gone into partnership with the City of Lincoln and is lending its workers to carry out special projects for the City. The company thus retains qualified workers, contributes to the local quality of life, and gains a partial tax deduction.

5. Harry Sussman (R) will be working with a new program at the Montville Correctional Center. Harry's gardening expertise will help inmates develop a system to preserve seeds from classic old favorite plants. Seed catalogs sometimes ignore these varieties in favor of new hybrid varieties.

6. The Naval Air Engineering Center has initiated an environmental control project on mosquitoes. They introduced the fish Gambusia affinis into Center waterways. This small fish is a prolific feeder on mosquito larvae. The successful introduction, initiated in 1977, has resulted in the significant reduction of pesticide use.

7. The Marshall Space Flight Center has developed a new pivot attachment for prefabricated beams. Good for roof trusses, bleachers, or other lightweight structures, the joint is flexible when the pivot is attached but becomes rigidized by attaching a threaded collar. Call for more information.

8. The Northern Regional Research Center of the Agricultural Research Service has developed a new biodegradable plastic (made with corn starch) that should have an immense impact on the packaging industry.

(Cont'd on p. B-13)

9. Natick Laboratories has developed a new high quality, shelf-stable, pre-cooked, hot tray pack for foods that could be used in the Meals on Wheels program. A hot water boiler and tank heats the food enroute to its destination.
10. A new form of dust protection to protect machine operators now exists. The device is an air canopy that does not interfere with vision, hearing, or talking, but keeps out harmful respiratory dust.
11. Don Balducci (NL) is working with the Westerly Senior Citizens in order to study what kind of public address system would be suitable for the hearing impaired.
12. Mario Tristany, Planning Director for the City of Norwich, invites all you artists and craftspeople to participate in the City's Harbor Day on Sept. 11. There is no entry fee for displaying your works but he would like a phone call to reserve space. 387-6250
13. Rudy Croteau (NL) is working with David Ogile at the State Capitol to make recommendations on correcting the problems brought on by painting the acoustic tile.
14. Ken Leiper (ND) will work with Dick Lougee, East Lyme First Selectman, and Joe Care (R) to attempt to correct a vandalism problem at a town water tank.
15. Fred Ponte (NL) will work with Bill Block, Norwich Purchasing Agent, to try to set up a comprehensive system for non-hold items.
16. Bob O'Neill will work with the United Fund Committee that reviews agencies funding requests.
17. Richard McLellan, Connecticut College called for help with a children's Little Theatre group. Thelma Charles is interested in helping since she has experience in both set and program design.
18. Les Cory (N) is working with John Barath, a Norwich Cerebral Palsy victim, to make a talking computer. John graduated from St. Bernard's with honors, and has been accepted at UConn. His mother was concerned about his ability to prove his math competence to his instructor since he cannot speak or write. The new computer should solve those problems.
19. The City of Groton is concerned about odor problems at the treatment plant. They were referred to the Army's Cold Regions Lab specialist for recommendations on new chemicals that might help with the problem.
20. The Town of Groton is interested in having a Naval Air Engineering Center specialist look at a chlorination problem they are experiencing.
21. Joe Babiak (Npt) will be working with the Blackstone Valley Commission to help them sort out information on recent computer presentations made to them.
22. Steve Gilardi (NL) is working with Les Cory to develop electronic devices for the handicapped.
23. George Panko (NL) will research the existence of a computer CRT that works by touching the screen. Anyone having any leads on this equipment, please contact George at X5033, or X4536.
24. The City Manager of Newington, Ct. has called. The City recently finished a computer needs assessment for their departments and wants advice on the next steps they should take. John Barkley (NL) will investigate the problem.

Remember, if you know of technical problems that your community is experiencing, please make the Technology Transfer office aware of the details. Perhaps a reasonable, cost effective solution has been found in another community. Technical Volunteerism works because individuals take it upon themselves to look for solutions to local problems.

1.10.86
COMMUNITY LIAISON COORDINATOR



The Grey Underground

Newsletter for the NUSC Technical Volunteer Network

October 1982

RETIREE MEETINGS

New London-October 20
10:00am-Norwich, (Check
with Planning Director
City Hall for Room #

Newport-Portsmouth
10:00 am, Oct. 13
Town Hall

1. The work done by the NUSC Technical Volunteers is gaining national attention in the handicapped world. This office has received requests from disabled persons in Ohio, Kansas, and Pennsylvania. Because of our national linkage to other laboratories through the Federal Laboratory Consortium, these persons were put in contact with other laboratories where they could obtain adaptive engineering technical assistance. Participating labs are the Naval Air Development Center, Wright-Patterson Air Force R & D Center, and Ames Laboratory. Good work all for setting the pace for others to follow. It is much appreciated by the receivers out there!!!!
2. Newington Children's Hospital has requested the opportunity for several of their rehabilitation staff to meet with Technical Volunteers to present a technological Wish List. Specific areas would be computers, eye control technology, adaptive engineering, electronics, etc. The date for a New London presentation has been set for October 19 at 0930 am in the Cafeteria Conference Rm. in Bldg. 30. A similar meeting is scheduled in Newport, the Conference Rm. in Bldg. 990 at 10:00 on October 28. Supervisory approval required.
3. Diane Davis (Npt.) having done an excellent job of capsulizing the education, experience, and volunteer interests of Newport retirees, is now doing the same thing for New London retirees. This kind of synopsis is valuable in educating municipal officials about the kind of expertise NUSC workers possess.
4. Roger Read (NL) says the math department at a Stonington junior high has a new TRS-80. They are interested in learning how other junior highs are incorporating microcomputers into the math curriculum. If any of you have junior high aged children who are using microcomputers in their mathematics program, please let Roger know so he can pass the information along.
5. General Dynamics-Electric Boat was interested in learning more about the CRREL developed paint that prevents ice adhesion. Local government thought it would be useful for fire hydrants and another caller wanted to explore the possibility of putting it on his airplane. Any other good ideas????

(Cont'd on p. B-15)

2.

6. George Panko (NL) is investigating the software programs that a NASA/Wallops Computer Club is generating for the handicapped. Supposedly they are adapting game software so it can be used with a single switch. They are also writing educational programs that will be helpful to this population.
7. Harry Sussman (R/NL) has made recommendations on the tomato varieties to be planted in the Montville Correctional Center's new greenhouse. Gil Wagner, an environmental chemist with an interest in plants will be retiring from Pfizers soon and will join Harry in helping to plan a greenhouse-woodlot program at the jail.
8. Lawrence Livermore Laboratory Technology Transfer office called to trade information on work with the handicapped. It seems they are working with speech pathologists in California.
9. City of Norwich officials have been visiting the New London lab for informal discussions on computers, word processing, and facilities management. The City's department heads want to update themselves in these areas about new products, processes, applications, etc. This is part of a national demonstration project in which cities are paired with laboratories to determine the kind of benefits cities can receive from such a relationship.
10. A new company has introduced a product that makes big computers perform like small ones. The reason? Software packages are more affordable for microcomputers. In addition, this device eliminates the need for expensive floppy disc drives. Also, the micro can use a mini's high speed printer. "The Bridge" as this device is called, can be obtained through Virtual Microsystems, Inc. in Berkeley, Ca.
11. The Swedes are trying a new method of eliminating an acidic condition in a local lake. They dumped in all the eggshells from a local baking company in an attempt to neutralize the sulfuric acid. Results are still not in but Uppsala University feels it may work if the lake is not too highly acidic.
12. The French have developed a new moveable automatic toilet. Users deposit 20 cents in an electronic collection box. After use, the system is cleaned for 45 seconds by a high speed rotating brush and pressurized water. Next it is disinfected and then a perfumed deodorant is sprayed into the cabinet and the bowl is dried. This may be a solution for municipalities who must deal with a large influx of tourists every summer.
13. A Welsh company has developed a patented carpet of synthetic material to be used to create year round ski slopes. Boston Hills Ski area in N. Andover, Ma. will have the largest slope which will measure 1300 ft. long by 144 ft. wide.

(Cont'd on p. B-16)

3.

14. Israel has trademarked a new extinguisher system that provides effective fire protection for data processing systems and stored data. It uses a special gaseous agent that does not damage micro-film, magnetic tapes, etc. Within fractions of a second, the gas denies oxygen and snuffs out a fire.
15. The Canadian Mounties have developed a new method to stop vehicles in a high speed chase. The hollow spike strip is both 100% effective and falls within the required safety range for such devices. It consists of two rows of hollow spikes inserted in 4 ply woven rubber belting with a segmented metal back plating. The spikes are ground at a 15° angle and is Teflon coated to allow easy penetration of the tires. When a suspect vehicle passes over the spikes, they penetrate the front tires and break loose from the belt causing air to escape slowly from the tires. This method causes no steering problems but brings cars to a safe stop.
16. The Southern New England Telephone Company is developing an audio visual program for public use of the Nautilus. They are looking for examples of lore, legend, and trivia to make the project more interesting. If you served aboard the Nautilus, or know someone who did, and have interesting information to share:

Contact: Mr. Richard Newberg
SNET
200 Captain's Walk
New London, Ct., 06320
Phone: 203 447-6405

17. The National Bureau of Standards is receiving a patent for a new method of removing sulfur dioxide from waste gases. The idea revolves around a reaction scheme whereby ozone (via an olefin such as propylene) and water vapor are introduced into a gas stream containing sulfur dioxide. They act to form a variety of Criegee intermediates which combine almost immediately with the sulfur dioxide. The end products are sulfuric acid and nitric acid mists - both of which can be further refined to use in commercial fertilizer. There are certain unknowns about this process, but the researchers suggest this method offers advantages over the commonly used limestone slurry system.
18. Visicalc, or one of the other electronic spread sheets, are finding new uses due to innovative users. Some folks use it to gain better control over cash flow, to answer financial and budgetary "what if" questions, and others keep track of expense account reporting on the system. According to users, who have even developed a newsletter, the uses for this system are limited only by the imagination of the user.

(Cont'd on p. B-17)

4.

19. Doug Peabody of Waterford, called to inquire whether the federal government had courses in 1) interpersonal communications, 2) time management, 3) intergovernmental communication. He was referred to John Harris who informed him that municipal officials were entitled to attend federally sponsored courses.
20. The new Westerly Senior Citizens Center received the stereo speakers donated by Fred Williams and refurbished by Jim Hazlin.
21. NASA has developed a coating that protects sensitive equipment from heat. An immediate civilian application would be to protect fuel lines during a boat fire. (at least during the first few minutes)
22. A Pavement Management Course has been developed by the University of Illinois. The course is based on a US Army Corps of Engineers Project. U of I held the 3-day course in August. Perhaps a New England university would like to transfer the idea here.
23. For all you towns with beaches to be maintained, Cocoa Beach, Fla. has a new beach cleaner. The new system that has an automatic hydraulic lift means that one man can position the device next to a 55 gallon trash barrel, dump the can, and sets the can back in place. One man now empties 200 trash cans.
24. Clearwater, Fla. has effected substantial savings by instituting continuous road maintenance. At the first sign of street cracking or raveling, the area is sprayed with emulsified asphalt with a followup application of crushed rock. This treatment lasts 2-3 times longer than plant mix.

If you have questions, requests, etc., call me at (203) 447-4603



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Community Liaison Coordinator

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